IN THE ABSTRACT:

Delete the abstract now of record and insert therefor the new abstract submitted herewith on a separate sheet.

REMARKS

In order to place this application in condition for a complete action on the merits, the specification has been suitably revised to correct informalities and to place it in better conformance with U.S. practice. A new abstract has been submitted to replace the original abstract. Claims 1-4 have been amended in formal respects to improve the wording and bring them into better conformance with U.S. practice. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**."

To obtain a fuller scope of coverage, new claims 5-13 have been added. Adequate support for the subject matter recited in these claims may be found in the specification as originally filed.

Early and favorable action on the merits are respectfully requested.

Respectfully submitted,

ADAMS & WILKS
Attorneys for Applicant

By: _____
Bruce L. Adams
Reg. No. 25,386

50 Broadway - 31st Floor
New York, NY 10004
(212) 809-3700

MAILING CERTIFICATE

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Debra Buonincontri
Name

Debra Buonincontri
Signature

MAY 22, 2003
Date

ABSTRACT OF THE DISCLOSURE

A derived data display adjustment system for a sample analyzer allows user selection of one or more displayed images to be subjected to a derived data calculation process. A derived data user interface is displayed on a display screen in response to user selection of one or more displayed images to enable user selection of a derived data calculation process. A determination is made as to whether or not display of the derived data may be achieved without interfering with other displayed images. If not, a derived data adjustment user interface is displayed to enable a user to select a convenient display location for display of the derived data.

"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

IN THE SPECIFICATION:

Paragraphs beginning at line 2 of page 2 and ending at page 3, line 12 have been amended as follows:

[Now, a] A Differential Scanning Calorimeter (DSC), which is a typical measuring [method of] apparatus for thermal analysis, is widely used for [adopted in] analysis of sample melting, glass transitions, heat history, crystallization, hardening reaction, Curie point, oxidation stability, heat instability and others [so on]. Calculation of derived data and [its] graphical display thereof will be described using a method stipulated in JIS K 7121 for calculating an extrapolated melting start temperature for plastic from a DSC curve, as an example. An extrapolated melting start temperature is obtained as a temperature corresponding to a point of intersection of a tangent for a stable region of a lower temperature side of a DSC curve and a tangent in the vicinity of the maximum inclination on the lower temperature side of the curve. In a method that is well known and broadly utilized, when the DSC curve shown in FIG. [4A] 3A is displayed[, when] and the user determines points (mark x) on the screen for stable regions [what] positioned on both side of inflection on the lower temperature side of the curve, and

specifies these points, the computer calculates tangents occurring at these points and displays these tangents. X-axis coordinate values for points where two tangents intersect, i.e. temperature values, are then displayed as numerical values in the vicinity of these intersecting points. When this derived data is graphically displayed on a display using analysis apparatus and this is being finished off by adjusting the displaying of a graphical report, it is necessary for the user to make the following designations at the computer.

1) Which type of derived data should be calculated within a plurality of different [type] types of derived data calculations?

2) Which derived data should be calculated within a plurality of data sets? (It is customary to display a plurality of items of data in a superimposed manner for comparison in this analysis. Refer to FIG. 4B).

3) Specifying a necessary parameter for calculating derived data such as calculation range and calculation point.

4) Adjustment after calculating derived data by fine adjusting derived data, preventing derived data and original data from overlapping on the screen and etc.

Paragraph at lines 13-19 of page 3 has been amended as follows:

However, with this related derived data calculating user interface, after selecting [which of] whether calculation of the derived data or adjustment of the derived data is to be performed using some kind of known method, the target is then designated (which calculation source data or which derived data) and the operation (derived data calculation or derived data adjustment) is carried out.

Paragraph at lines 13-16 of page 4 has been amended as follows:

(2) The user selects interpolated temperature calculation on a menu. (This enables specification of the derived data type to be calculated [to be specified], and, at this time, the analysis apparatus is in a state capable of receiving a calculation.) [Step 2(S2)]

Paragraph at lines 1-8 of page 5 has been amended as follows:

(6) When interpolated temperature calculations other than interpolated melting start temperature calculations, such as interpolated crystallization start temperature, etc., are successively made using the same DSC curve, (5) and (6) are repeated, and if a desired calculation finishes, the user

designates ending of calculations using the menu and calculation mode ends. The analysis apparatus then goes back to adjustment mode [Step 6 (S6)]

Paragraph beginning at line 6 of page 6 has been amended as follows:

When analyzing, it is well <u>often desired</u> [performed] to create the same type of derived data for a plurality of <u>different</u> data <u>sets</u> to be compared. In the case of the related art, the designation of the necessary parameters [step 4] for calculating a selection [step 2] of a derived data type is carried out after first implementing designation [step 1] as to whether or not to perform calculations on derived data, and which data to perform calculations on. When calculations are then performed for the same derived data with respect to other data, alterations are again performed after designating other interfering data from when calculation/adjustment of the derived data is completed with respect to this data. In the aforementioned example, it is necessary to repeat the operation from (1) to (11) for every DSC curve, so that when calculating derived data for many curves, it takes time to perform the above operation every time.

Paragraphs beginning at line 25 of page 13 and ending at line 8 of page 17 have been amended as follows:

A specific example of a derived data display adjustment system of the present invention is now described giving an example of data for a differential scanning calorimeter constituting a thermal analysis apparatus. The kind of characteristic curve shown in FIG. [3A] 4A is obtained by the DSC for each item of data. The display then becomes as shown in FIG. [3A] 4B when DSC curves obtained for a plurality of items of data at the analysis apparatus are displayed at the display. There are also demands where interpolation melting start temperatures are calculated for each item of data for comparison and investigation, with it being wished to give notification of this in the form of a graphical display for ease of understanding.

(a) First, the user clicks the DSC curve constituting the calculation source. Data from the plurality of data that is to constitute the current subject of calculation is then specified as the curve shown by the arrow in FIG. 4B [3B].

(b) The user selects interpolated temperature calculation from a menu on the screen. In this way, the operation to be carried out is a derived data calculation/adjustment operation and the type of this derived data is specified as an interpolated temperature calculation.

(c) The analysis apparatus receives the specification of the data that is to constitute the calculation target and displays an X-Y cursor on the screen. This is achieved by displaying a derived data calculation user interface.

(d) The user then operates the cursor to designate two points for calculating the interpolated melting start temperature. In this case the derived data to be investigated is the interpolated melting start temperature. The two points selected are self-evident as the stabilization point for both sides of the point of inflection of the low temperature side curve and the maximum gradient point for the root diameter DSC curve. This selection is therefore appointed as a user operation. This is achieved through input of the operation parameters.

(e) Calculation is then possible when the parameters are specified. The analysis apparatus then draws a line connecting the two points and displays the points of intersection with this line, and displays the temperature constituted by the X-coordinate value in a numerical manner in the vicinity of this point of intersection as shown in FIG. 4C [3C]. This is achieved by calculating the derived data. However, the interpolated melting start temperature displayed numerically is displayed in such a manner as to be superimposed with other data curves, making the graph

difficult to see. It is therefore wished to move the position of displaying these numerical values prior to executing interpolated temperature calculations for other data.

(f) In the present invention, the user can select numerical displays for interpolated melting start temperatures on the screen prior to selecting other data curves. This is achieved by the selection of graphical elements.

(g) The selected graphical elements are numerical displays for the derived data. The analysis apparatus therefore recognizes this as information indicating that calculation is not possible, changes over to adjustment mode, and displays a rectangular-shaped image region for the numeric display as shown in FIG. 4D. This is achieved by displaying an adjustment user interface when it is determined that calculation is possible.

(h) The user can then drag the rectangular region to a preferred position so that the numerical display does not overlap with the DSC curve, as shown in FIG. 4E. This is achieved by adjusting the derived data.

In the above operation, derived data calculation and adjustment is completed for one item of data. The procedure in (a) to (h) is also repeated for other items of data. Finally, a graphical display that is easy to see as shown in FIG. [3D] 4F can be made. In the above procedure, that

operated by the operator is (a), (b), (d), (f), (h), with (c), (e) and (g) being automatically executed in the process flow of the analysis apparatus. In this embodiment, interpolated melting start temperature of a DSC is given as an example of derived data but a wide variety of other data types may also be adopted. For example, with JIS K7121, in addition to the melting temperature there are a melting peak temperature and an interpolation melting start temperature, giving three types. In addition, a liquid crystal temperature and a glass transfer temperature are also obtained as derived data. Further, in the field of thermal analysis, with regards to DSC's, thermogravimetry (TG) and thermo-mechanical analysis (TMA) etc., a plurality of JIS's are defined according to the object of utilization of a multiplicity of derived data. First order differentiation data and integration data obtained using differentiation or integration operations can also be utilized. There is also derived data decided upon between participants that is not publicly defined. The example described here is not limited in this respect, and the present invention may also be applied to calculation and adjustment of derived data for this kind of broader range.

IN THE CLAIMS:

Claims 1-4 have been amended as follows:

1. (Amended) A derived data display adjustment system for a sample analyzer having a computer which enables user selection of [to select] new graph elements from a plurality of displayed sample characteristics to be subjected to derived data calculation or adjustment [of derived data] when calculation or adjustment of derived data of a previously selected graph element is executed, comprising: a display screen for displaying the plurality of sample characteristics; means for displaying on the display screen [with] a derived data calculation user interface [being displayed] to enable user selection of a derived data calculation process when calculation and display of derived data for a selected graph element is possible; [elements are computable,] and means for displaying on the display screen [with] a derived data adjustment user interface for enabling user adjustment of a display position of derived data [being displayed] when calculation and display of the derived data for the selected graph element [the computation] is not possible.

2. (Amended) A [The] derived data display adjustment system according to [of] claim 1; wherein the means for displaying comprises means for determining whether the

derived data calculation process is possible when a graph element is selected by a user for performing a derived data calculation process thereon, and displaying [, wherein] one of the derived data calculation user interface and the derived data adjustment [the] user interface based on the determination result [corresponding to an executable process is displayed in a situation where the computer is set up when a graph element is selected].

3. (Amended) A [The] derived data display adjustment system according to [of] claim 2; [,] wherein [a cursor is displayed as] the derived data calculation user interface comprises a cursor displayed on the display screen when the graph element comprises [is] a data curve.

4. (Amended) A [The] derived data display adjustment system according to [of] claim 2; [,] wherein the derived data adjustment user interface comprises a user-movable [a movable derived data] display region [is] displayed on the display screen [as the derived data adjustment user interface] when the graph element is a derived data display.